AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-37 (cancelled).

38 (previously presented). A method of assessing one or more characteristic(s) of an organ or part thereof from multiple images of the organ or part thereof, the method comprising the work flow steps of:

defining the spatial position of at least two of the images;

forming an initial fit between a reference model of the geometric shape of the organ or part thereof and the images according to reference markers on the images;

manually user-defining one or more reference guide points associated with one or more images displayed to a user, for which the spatial positions have been defined;

converting the guide points to three-dimensional coordinates;

improving the fit of the model by fitting the model to the guide points to form an estimate model for the organ or part; and

assessing the one or more characteristic from the estimate model.

39 (previously presented). A method as claimed in claim 38 including forming the initial fit between the reference model and the images by defining a point on each of two images, defining a reference line in 3-dimensional space between the point, calculating the distance as a function of the length of the reference line, and at least approximately matching the scale of the reference model and the images according to the distance between the points.

40 (previously presented). A method as claimed in claim 39 wherein the reference model comprises a mathematically defined reference model .

41 (previously presented). A method as claimed in claim 40 wherein the reference model comprises an ellipsoid having the reference line as a central axis and one or more surface points, each surface point specified by a radial distance from the central axis.

42 (previously presented). A method as claimed in claim 38 comprising the steps of displaying one or more images to a user and superimposing on the image a representation of the intersection of the reference model with the image.

43 (previously presented). A method as claimed in claim 42 further comprising the step of performing image processing on one or more of the images.

44 (previously presented). A method as claimed in claim 42 wherein the reference points are boundary points on the image(s).

45 (previously presented). A method as claimed in claim 38 further comprising the step of calculating the volume of the subject organ or part from the estimate model.

46 (previously presented). A method as claimed in claim 38 further comprising the step of calculating the mass of the subject organ or part from the estimate model.

47 (previously presented). A method as claimed in claim 38 wherein the subject organ comprises a ventricle of the heart and the characteristics measured include ventricular mass, endocardial volume and/or wall thickness of all of the ventricle or part thereof.

48 (previously presented). A method as claimed in claim 38 wherein the subject organ comprises a ventricle of the heart and the characteristics measured include ventricular abnormalities identified through changes in wall thickness over time.

49 (previously presented). A method as claimed in claim 38 wherein the subject organ comprises a kidney and the characteristics measured include cortical thickness.

50 (previously presented). A system for assessing one or more characteristics of an organ or part thereof of a subject from multiple images of the subject's organ or part thereof, the system comprising:

a memory in which is stored the spatial position of at least two of the images;

initial fitting means arranged to form an initial fit between a reference model of the organ or part thereof according to reference markers on the images;

reference guide point definition means enabling a user to define one or more reference guide points associated with one or more images displayed to the user, for which the spatial positions are stored in the memory;

conversion means arranged to convert the guide points to three-dimensional coordinates;

fit improving means arranged to improve the fit of the reference model to the guide points to form an estimate model for the organ or part thereof; and

calculation means arranged to assess the one or more characteristics from the estimate model.

51 (previously presented). A system as claimed in claim 50 wherein the fitting means is arranged to form the initial fit between the reference model and the images by defining a point on each of two images, defining a reference line in 3-dimensional space between the points,calculating the distance as a function of the length of the reference line, and at least approximately matching the scale of the reference model and the images according to the distance between the points.

52 (previously presented). A system as claimed in claim 51 wherein the reference model comprises a finite element model.

53 (previously presented). A system as claimed in claim 52 wherein the reference model comprises an ellipsoid having the reference line as a central axis and one or more surface points, each surface point specified by a radial distance from the central axis.

54 (previously presented). A system as claimed in claim 50 further comprising display means arranged to display one or more images to a user and to superimpose on the image a representation of the intersection of the reference model with the image slice.

55 (previously presented). A system as claimed in claim 54 further comprising image processing means arranged to perform image processing on one or more of the images.

56 (previously presented). A system as claimed in claim 54 wherein the reference guide point definition means is arranged to obtain preferred guide point positions from a user.

57 (previously presented). A system as claimed in claim 50 further comprising volume calculation means arranged to calculate the volume of the subject organ or part from the estimate model.

58 (previously presented). A system as claimed in claim 50 further comprising mass calculation means arranged to calculate the mass of the subject organ or part from the estimate model.

59 (previously presented). A system as claimed in claim 50 wherein the subject organ comprises a ventricle of the heart and the characteristics measured include ventricular mass, endocardial volume and/or wall thickness of all of the ventricle or part thereof.

60 (previously presented). A system as claimed in claim 50 wherein the subject organ comprises a ventricle of the heart and the characteristics measured include ventricular abnormalities identified through changes in wall thickness over time.

61 (previously presented). A system as claimed in claim 50 wherein the subject organ comprises a kidney and the characteristics measured include cortical thickness.

62 (previously presented). A computer program for assessing one or more characteristics of an organ or part thereof of a subject from multiple images of the subject's organ or part thereof, the program comprising:

storage means arranged to store the spatial position of at least two of the images;

initial-fitting means arranged to form an initial fit between a reference model of the organ or part thereof according to the reference markers on the images;

reference guide point definition means enabling a user to define one or more reference guide points associated with one or more images displayed to a user, for which the spatial positions are stored in the memory;

conversion means arranged to convert the guide points to three-dimensional coordinates;

fit improving means arranged to improve the fit of the reference model to the guide points to form an estimate model for the organ or part thereof; and

calculation means arranged to assess the one or more characteristics from the estimate model.

63 (previously presented). A program as claimed in claim 62 wherein the initial-fitting means is arranged to form the initial fit between the reference mode and the images by defining a point on each of two images, defining a reference line in 3-dimensional space between the points, calculating the distance as a function of the length of the reference line, and at least approximately matching the scale of the reference model and the images according to the distance between the points.

64 (previously presented). A program as claimed in claim 63 wherein the reference model comprises a finite element model.

65 (previously presented). A program as claimed in claim 64 wherein the reference model comprises an ellipsoid having the reference line as a central axis and one or more surface points, each surface point specified by a radial distance from the central axis.

66 (previously presented). A program as claimed in claim 62 further comprising display means arranged to display one or more images to a user and to superimpose on the image a representation of the intersection of the reference model with the image.

67 (previously presented). A program as claimed in claim 66 further comprising image processing means arranged to perform image processing on one or more of the images.

68 (previously presented). A program as claimed in claim 66 wherein the reference guide point definition means is arranged to obtain preferred guide point positions from a user.

69 (previously presented). A program as claimed in claim 62 further comprising volume calculation means arranged to calculate the volume of the subject organ or part from the estimate model.

70 (previously presented). A program as claimed in claim 62 further comprising mass calculation means arranged to calculate the mass of the subject organ or part from the estimate model.

71 (previously presented). A program as claimed in claim 62 wherein the subject organ comprises a ventricle of the heart and the characteristics measured include ventricular mass, endocardial volume and/or wall thickness of all of the ventricle or part thereof.

72 (previously presented). A program as claimed in claim 62 wherein the subject organ comprises a ventricle of the heart and the characteristics measured include ventricular abnormalities identified through changes in wall thickness over time.

73 (previously presented). A program as claimed in claim 62 wherein the subject organ comprises a kidney and the characteristics measured include cortical thickness.

74 (previously presented). A computer program as claimed in claim 62 embodied on a computer readable medium.

75 (previously presented). A method of assessing one or more characteristic(s) of an organ or part thereof from multiple images of the organ or part thereof, the method comprising the work flow steps of:

defining the spatial position of at least two of the images;

forming an initial fit between a reference model of the organ or part thereof and the images;

manually user-defining one or more reference guide points associated with one or more images displayed to a user, for which the spatial positions have been defined;

converting the guide points to three-dimensional coordinates;

improving the fit of the model by fitting the model to the guide points to form an estimate model for the organ or part; and

assessing the one or more characteristic from the estimate model.

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76 (previously presented). A method as claimed in claim 75 including forming the initial fit between the reference model and the images by defining a point on each of two images, defining a reference line in 3-dimensional space between the point, calculating the distance as a function of the length of the reference line, and at least approximately matching the scale of the reference model and the images according to the distance between the points.

77 (new). A method of assessing one or more characteristic(s) of an organ or part thereof from multiple images of the organ or part thereof, the method comprising the work flow steps of:

defining the spatial position of at least two of the images;

forming an initial fit between a reference model of the geometric shape of the organ, or part thereof and the images;

displaying one or more images to a user and superimposing on the image a representation of the intersection of the reference model with the image;

manually user-defining one or more reference guide points associated with one or more images displayed to a user, for which the spatial positions have been defined;

converting the guide points to three-dimensional coordinates;

improving the fit of the model by fitting the model to the guide points to form an estimate model for the organ or part; and

assessing the one or more characteristics from the estimate model.

78 (new). A method as claimed in claim 77 including forming the initial fit between the reference model and the images according to reference markers on the images.

79 (new). A method as claimed in claim 78 wherein the step of forming the initial fit between the reference model and the images includes the steps of defining a point on each of two images, defining a reference line in three-dimensional space between the point, calculating the distance as a function of the length of the reference line, and at least approximately matching the scale of the reference model and the images according to the distance between the points.

80 (new). A method as claimed in claim 79 wherein the reference model comprising a mathematically defined reference model.

81 (new). A method as claimed in claim 77 wherein the reference points are boundary points on the image(s).